REMARKS

I. Status of the Claims

Claims 1-57 are pending in this application, with claims 1-19 and claims 26-57 deemed non-elected. Solely to facilitate prosecution and without disclaimer or prejudice to their later entry in a related application, Applicants have cancelled 1-19 and 26-57.

In addition, and similarly in an effort to facilitate prosecution and without disclaimer or prejudice, Applicants have amended claims 20-25, to more particularly describe the subject matter of the invention. Support for "[a] composition comprising a flocculant . . . " of claim 20 may be found, for example, in the claims-as-filed and in the specification at paragraph [0070].

Applicants have also introduced new claims 58-64 to recite uses of the composition of claim 20. Thus, the new claims recite a method of flocculating industrial wastewater comprising obtaining a composition comprising soybean protein with a concentration of at least about 15 grams/liter, and adding the composition to wastewater, wherein the composition increases the settling rate of suspended particles and/or increases the volume of settled sludge. This amendment finds support, for example, in the specification at paragraphs [0011] and [0070] on the use of soybean protein to flocculate waste water and at paragraph [0027] for the definition of flocculate, as well as Examples 18 and 19. New claims 59 and 60 recite concentrations of the soybean protein and find support, for example, in original claim 21 as well as paragraph [0064] and Example 19. New claim 61 recites thermal treatment which finds support in original claims 22-25 as well as paragraph [0064]. New claim 62 recites a pH

modification of about 5.8 to about 6.6 as supported by Examples 18 and 19. New claim 63 recites a dosage of the soybean protein which finds support at least in original claim 56 and paragraph [0256]. Finally, new claim 64 specifies industrial wastewater from the dyeing industry and finds support at least in Example 18. Thus, the amendments introduce no new matter.

The Office rejected elected claims 20-25 as follows:

a. claims 20-25 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Atlas R.M., Handbook of Microbiological Media, CRC Press, Inc., 1993, p. 820 ("Atlas") (Office Action, page 4);

b. claims 20-25 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 4,105,804 to Terui et al. ("Terui") and U.S. Patent No. 4,059,572 to Nakamura et al. ("Nakamura") in view of Talaro et al., Foundations in Microbiology, Wm. C. Brown Publishers, 1993, pp. 272-274 ("Talaro") (Office Action, pages 5-6).

II. Information Disclosure Statement

The Office has asserted that the information disclosure statement filed on August 23, 2004 fails to comply with 37 CFR 1.98(a)(1). Office Action at page 3. In particular, the Office pointed out that the information disclosure statement is for a different application, and asserting that no copies of references were provided. Office Action at page 3.

Applicants have investigated and found that the Information Disclosure Statement itself did recite the correct application number but that the Form 1449 recited

the wrong application number. In addition, Applicants note that the PTO-stamped return postcard indicates that copies of the 33 references were submitted and received by the PTO.

To ensure that the file is complete and accurate, Applicants submit a revised Form 1449 with the correct application number as well as courtesy copies of the references previously submitted. Should this submission not satisfy the Office, the Applicants respectfully request that the Examiner contact the undersigned.

III. The Claims Are Not Anticipated

The Office rejects claims 20-25 under 35 U.S.C. § 102(b) as allegedly being anticipated by Atlas. Office Action, page 4. Specifically, the Office alleges that Atlas "discloses a bacterial medium composition comprising soybean protein in amounts at least 15g/L or 15-120 g/L." Office Action, page 4.

Applicants respectfully traverse because Atlas does not provide each and every element of the claims. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131 at 2100-73 (8th ed. rev. May 2004); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). As set forth below, Atlas does not provide the recited concentrations of soybean protein.

First, the Soy Peptone Broth uses 20 grams of a "[p]apaic digest of soybean meal" in 1 liter of water. As would be understood by those in the art, soybean meal has

about 50% protein.[1] Thus, at most, the discussion of Soy Peptone Broth only teaches a concentration of soybean protein of 10 grams/liter. Consequently, the Soy Peptone Broth is not at least about 15 grams/liter soybean protein and, thus, does not anticipate the claims of the instant application.

In addition, it appears that neither the Soybean Agar nor Soybean Extract, M1 contain any protein. Both media are prepared by first heating whole soybeans to 121°C and 100°C, respectively, filtering the liquid through cheesecloth, and using the filtrate for the media, thus suggesting that the solid material retained by the cheesecloth is discarded. As those of ordinary skill in the art would recognize, proteins would be denatured by such temperatures, becoming insoluble in water.[2] Thus, neither media provides any soybean protein, let alone the recited concentration of soybean protein in the claimed composition.

For at least these reasons, Atlas cannot anticipate the invention of claims 20-25 of the invention. Moreover, the media in Atlas cannot anticipate the method of use claims 58-64 for at least these reasons, as well as others.

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1 *See* Exhibit A (Definition of Soybean, Wikipedia), pages 4-5; Exhibit B (http://www.ingredients101.com/soybeanml.htm)(a "[t]ypical analysis" of soybean meal shows *48% crude protein*); Exhibit C (American Soybean ASA manual, Chapter 4), pages 3-4 (emphasis added).

2 *See* Exhibit D, Protein Separations, pages 1-2 (http://www.membraneworld.com/psepars.html). Soy proteins "are easily denatured by heat and become insoluble in water [with] [m]oist heat [being] more effective for denaturation than dry heat. With water of high temperature, the small molecular weight materials, including soluble sugars, are extracted from the insoluble protein and polysaccharide matrix." *Id.*

IV. The Claims Are Not Obvious

The Office rejects claims 20-25 under 35 U.S.C. § 103(a) as allegedly being obvious over Terui and Nakamura in view of Talaro. Office Action, pages 5-6. Applicants respectfully traverse because the Office has not set forth a *prime facie* case of obviousness. Under 35 U.S.C. § 103, the Office bears the initial burden of establishing a *prima facie* case of obviousness. MPEP § 2142 at 2100-128-129 (Rev. 2, May 2004); *In re Piasecki,* 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make out a *prima facie* case, the PTO must satisfactorily show that:

(1) the cited reference or combination of references teaches or suggests every limitation of the claim;

(2) the references relied upon, coupled with the knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references; and

(3) the proposed modification of the references has a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made.

MPEP § 2143 at 2100-129; *Karsten Mfg. v. Cleveland Gulf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001); *Amgen Inc. v. Chugai*, 927 F.2d 1200, 1209 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970).

The Office alleges that Terui "teaches the use of soybean proteins for separation of bacterial cells from a culture broth and it demonstrates that amounts of precipitated bacterial cells increase with the increases of amount of soybean powder added . . . ." Office Action, page 5. However, Terui teaches the use of soybean protein to precipitate several types of bacterial cells. *See*, for example, Figures 2a, 3, and 4. In contrast,

among the uses of the claimed soybean protein flocculant is together with strains of bacteria to flocculate other material. *See*, for example, paragraphs [0009] and [0052]. Accordingly, Terui does not suggest a composition comprising the soybean flocculant of the invention. Indeed, Terui suggests the opposite: a soybean protein that would disrupt the work of bacteria by precipitating it. Consequently, Terui teaches away from the invention, providing neither motivation to combine nor a reasonable expectation of success. Thus, Terui cannot render the claimed invention obvious.

Similarly Nakamura provides neither motivation nor an expectation of success. Indeed, Nakamura does not even suggest that soybean protein can be used to flocculate. Although the Office asserts that Nakamura "discloses determination of flocculation activity of various compounds including soybean proteins and it demonstrate that sedimentation rate or flocculation activity of soybean protein directly depends on concentration," Office Action, page 5, Nakamura actually teaches the flocculation activity of a mucopolysaccharide from cultures of *Aspergillus* and its ability **to** flocculate soybean protein. *See* Nakamura, Examples 1 and 2, Tables 2 and 3. Thus, the only soybean protein teaching of Nakamura is that soybean protein itself could be flocculated. This cannot teach or suggest the use of soybean protein to flocculate anything. Accordingly, Nakamura cannot render the claimed invention obvious.

The deficiencies of the primary references cannot be remedied by the teaching in Talaro of thermal treatment.

For at least these reasons, Applicants request that the rejections of claims 20-25 under Section 103 be withdrawn. And as above, for at least these reasons, the three references cannot render obvious the method of use set forth in new claims 58-64.

SUMMARY

In view of the above amendments and remarks, Applicants submit that claims 20-25 and 58-64 are in condition for allowance. An early and favorable action is earnestly solicited.

Please grant any extensions of time required to enter this amendment and response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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